

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A hydroforming apparatus (10) comprising:

a hydroforming die ~~member~~ assembly (14) comprising an upper die and a lower die (19, 21), said upper die and lower die cooperating to form a die cavity therebetween, said lower die having a pair of slots, said pair of slots positioned adjacent an end portion of the die cavity;

a hydroforming press (16, 18) having a tube engaging structure moving through a housing (22);

a fastener assembly (37) comprising a pair of fasteners, each fastener (24) having a shaft (30) terminating at a shoulder (32), the shoulder forming a head (33), and a spacer (29) disposed about the fastener (24);

each of the fastener fasteners (24) being secured to the press housing (22) at one end of the shaft (30) and the shoulder (32) of the fastener (24) received within a slot one of said pair of slots (28) formed in the lower die (21) member (14) for connecting the lower die (21) member (14) and press (16, 18) and aligning the tube engaging structure with the end portion of the die cavity, and the spacer (29) extending between the lower die (21) and press housing (22) to space the press housing (22) a predetermined distance from the lower die (21).

2. (Cancelled)

3. (Original) The hydroforming apparatus (10) of claim 1 wherein the first end of the shaft (30) comprises a threaded end (31) for mating with a nut (36).

4. (Cancelled)

5. (Currently amended) The hydroforming apparatus (10) of claim [[4]] 1 wherein the slot (28) has a keyhole structure and is formed in an upwardly projecting structure (59) formed in the lower die member (21).

6. (Original) The hydroforming apparatus (10) of claim 1 wherein the slot (28) comprises a wider portion (60) and a narrower portion (62) both having a top opening (64).

7. (Original) The hydroforming apparatus (10) of claim 6 wherein the wider portion (60) is configured to receive the shoulder (32) of the fastener (24).

8. (Original) The hydroforming apparatus of claim 1 wherein the slot (28) includes transversely extending wall surfaces (58) for engaging an annular surface (56) of the shoulder (32).

9. (Original) The hydroforming apparatus of claim 1 wherein a slot (68) comprises a pair of upwardly projecting structures (70, 72) integrally formed on a lower die member (67).

10. (Original) The hydroforming apparatus of claim 9 including a transversely extending groove (78) formed adjacent the structures (70, 72) for receiving a portion of the head (33) of the fastener (24).

11. (Cancelled)

12. (Original) The hydroforming apparatus of claim 1 wherein the fastener assembly (37) is loosely attached to the press housing (22) for allowing a single person to configure a press housing (22) and die member (14).

13-14. (Cancelled)

15. (Original) A method of attaching a hydroforming press (16, 18) to a hydroforming die member (14), comprising:

providing a hydroforming die member (14);

providing a hydroforming press (16, 18) having a housing (22);

providing a fastener assembly (37) comprising a fastener (24) having a longitudinal axis and a shaft (30) terminating at a shoulder (32), the shoulder forming a head (33), and a nut (36);

providing the die member (14) with a slot (28) configured to receive the shoulder (32) in a direction that is transverse to the longitudinal axis of the fastener (24);

providing a spacer (29) disposed about the fastener (24) to space the die member (14) relative to the press housing (22);

securing the shaft (30) of the fastener (24) to the housing (22); and

positioning the shoulder (32) of the fastener (24) within the slot (28) in the die member (14) by moving the shoulder (32) and the fastener (24) in a direction that is transverse to the longitudinal axis of the fastener (24).

16. (Original) The method of attaching a hydroforming press (16, 18) to a hydroforming die member (14) of claim 15 including the step of positioning the spacers (29) between a side (38) of the die member (14) and a side (40) of the press housing (22) to engage the die member (14) and the press housing (22).

17. (Original) The method of attaching a hydroforming press (16, 18) to a hydroforming die member (14) of claim 15 including the step of tightening nuts (36) to a specified level to secure the die member (14) to the press housing (22) after positioning the shoulder (32) within the slot (28).

18. (Original) The method of attaching a hydroforming press (16, 18) to a hydroforming die member (14) of claim 17 including the step of positioning a tube engaging structure (20) within the press housing (22) following the step of tightening the nuts (36).

19. (Original) The method of attaching a hydroforming press (16, 18) to a hydroforming die member (14) of claim 18 including the step of performing a hydroforming operation following the step of positioning the tube engaging structure (20).

20. (New) A hydroforming apparatus comprising:

a hydroforming die assembly including an upper die and a lower die, said upper die and lower die cooperating to form a die cavity therebetween, said lower die having a pair of slots, said pair of slots positioned adjacent an end portion of said die cavity;

a hydroforming press having a tube engaging structure moving through a housing;

a pair of fastener assemblies, each one of said pair of fastener assemblies including a fastener having a shaft extending between a shoulder end and a threaded end for mating with a nut, and a spacer disposed about said shaft;

each said fastener secured to said housing at said threaded end of said shaft by said nut and said shoulder of said fastener received within one of said pair of slots formed in said lower die for connecting said lower die and said hydroforming press and aligning said tube engaging structure with said end portion of said die cavity, wherein said spacer extends between and directly abuts said lower die and said housing to space said housing a predetermined distance from said lower die.